

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:

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# PCT

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing  
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
PCT/EP2004/009299

International filing date (day/month/year)  
18.08.2004

Priority date (day/month/year)  
28.08.2003

International Patent Classification (IPC) or both national classification and IPC  
H04M3/22, H04B3/46, H04B3/23, H04M9/08

Applicant  
KONINKLIJKE KPN N.V.

### 1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

### 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

### 3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/EP2004/009299

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**Box No. I Basis of the opinion**

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1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
  - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:
    - ☐ a sequence listing
    - ☐ table(s) related to the sequence listing
  - b. format of material:
    - ☐ in written format
    - ☐ in computer readable form
  - c. time of filing/furnishing:
    - ☐ contained in the international application as filed.
    - ☐ filed together with the international application in computer readable form.
    - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/EP2004/009299

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**Box No. II Priority**

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1. ☒ The following document has not been furnished:
- ☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).
  - ☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).
- Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.
2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:

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**Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	1-14
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-14
Industrial applicability (IA)	Yes: Claims	1-14
	No: Claims	

2. Citations and explanations

**see separate sheet**

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**Box No. VIII Certain observations on the international application**

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The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

**see separate sheet**

**Re Item V**

Reference is made to the following documents:

D1: EP-A-1 206 104 (KONINKL KPN NV) 15 May 2002 (2002-05-15)

D2: US 2003/053618 A1 (GRITTON CHARLES W K ET AL) 20 March 2003

**INDEPENDENT CLAIM 1**

1. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 does not involve an inventive step in the sense of Article 33(3) PCT.

- 1.1 The document D1 is regarded as being the closest prior art to the subject-matter of claim 1, and discloses (the references in parentheses applying to this document):

a method for measuring a talking quality of a communication link in a communications network. The method comprises the following steps (*see claim 1, column 10, lines 39-54*):

- a) a main step of subjecting a degraded speech signal  $s'(t)$  with respect to a reference speech signal  $s(t)$  to an objective measurement technique for measuring a perceptual quality of speech signals; and
- b) producing a quality signal  $q$  which represents an estimated value concerning the talking quality degradation, the degraded speech signal comprising a returned signal  $r(t)$ .

In the method of D1, the objective measurement technique comprises (*claim 1, column 10, line 55 to column 11, line 1*) a step of modelling masking effects in consequence of noise present in the returned signal.

Additionally, the modelling step comprises the determination of a threshold noise level (*claim 3, column 11, lines 45-47, "producing an estimated value  $N_e$  of the loudness of the noise present in the returned signal", see also paragraph 25, "this minimum  $N_e$  can then be used to define a threshold value  $T(N_e)$ "*) by determining a minimum value of the degraded speech signal  $s'(t)$  (*paragraphs 25 and 26,*

*"minimum loudness of the degraded signal", "this minimum may be put equal to a minimum loudness density  $N_e$ ", " $N_e$  being equal to the minimum value of the loudness found in the loudness degraded signal").*

- 1.2 The method defined in claim 1 differs from the one disclosed in D1 in that the determined minimum value of the degraded speech signal is a local one.
- 1.3 According to this difference, the problem to be solved by claim 1 is how to prevent an erroneous determination of the noise level.
- 1.4 However, D1 discloses that (paragraph 25, lines 18-23) the key idea of the method is that the minimum value of the degraded speech signal is representative of the noise during silent intervals (after the echo delay time) in the talker's speech.

Actually, the fact of estimating the noise when speech is absent in order to have an accurate estimation is a common practice in noise reduction systems, see for example document D2, paragraphs 29, 38-39.

- 1.5 Therefore, the person skilled in the art and trying to solve the aforementioned problem would use the teachings of D1 to determine the noise level only during silent intervals, which are indeed local portions of the entire speech signal. The subject-matter of claim 1 is therefore not inventive (Article 33(3) PCT).

#### INDEPENDENT CLAIM 8

2. The same objection and reasoning applies to claim 8, since D1 also discloses the means to perform the method of D1 (see columns 12-13, claims 10 and 12). The subject-matter of claim 8 is therefore not inventive (Article 33(3) PCT).

#### DEPENDENT CLAIMS 2-7 and 9-14

3. Dependent claims 2-7 and 9-14 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step. The reasons therefor are as follows:

The features of claims 2 and 9 have been previously discussed ("silent intervals").

The features of claims 3-4 and 10-11 are just implementation details about the signals and do not add anything inventive to the method of claim 1. The features of claims 5-6 and 12-13 relate to alternative ways of estimating noise which are well-known in the prior art. Finally, the subject-matter of claims 7 and 14 is already disclosed in D1 (see columns 11-12, claims 2-5 and columns 13-14, claims 11-12).

**Re Item VIII**

4. The application does not meet the requirements of Article 6 PCT, because claims 1, 4, 6, 8, 11 and 13 are not clear. The reasons therefor are as follows:

In claims 1 and 8, it is not clear in which sense or context the relative term "local" has to be interpreted. It is also not clear whether the "local minimum value" refers to the loudness of the degraded speech signal.

The wording of claims 4 and 11 using the expression "more preferably" renders the claims unclear. It is not clear whether the term "predefined value range" in claims 6 and 13 refers to time or to loudness.

Finally, the statement "which is incorporated herein by reference" in the description, page 1, lines 13-15 is also unclear.